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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,702	12/11/2003	Michael A. Fetcenko	HS-115	8674
24963	7590	05/10/2005	EXAMINER	
ENERGY CONVERSION DEVICES, INC. 2956 WATERVIEW DRIVE ROCHESTER HILLS, MI 48309			NGUYEN, CAM N	
			ART UNIT	PAPER NUMBER
			1754	
DATE MAILED: 05/10/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/733,702

Applicant(s)

FETCENKO ET AL.

Examiner

Cam N. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on originally filed is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102(b)***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 12, 17-22, 27, & 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawakami (US Pat. 6,040,087).

Kawakami discloses a powdery material having a function of storing and releasing hydrogen, comprising a compound which electrochemically stores and releases hydrogen, said powdery material having a structure of at least three layers comprising: a core of a hydrogen-storing alloy; a metal oxide layer provided on the surface of said core and having a function of preventing the oxidation of the alloy and allowing atomic hydrogen or hydrogen ions to pass therethrough; and a metal element dispersed on the surface of said metal oxide layer and having a function of activating hydrogen (see col. 40, claim 1). The metal oxide layer comprises at least one transition metal element selected from the group including molybdenum, tungsten, vanadium, niobium, titanium, zirconium and iridium (see col. 40, claim 2). The metal element dispersed on the surface of said metal oxide layer is at least one transition metal element selected from a group including nickel, chromium, molybdenum, cobalt, copper, palladium, platinum, iron, ruthenium, rhodium, iridium, tungsten, titanium and

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manganese (see col. 40, claim 3). The hydrogen-storing core layer comprises an alloy of nickel and magnesium (see col. 40, claim 4). Kawakami further discloses that a part of magnesium in the hydrogen-storing core layer composed of the alloy of nickel and magnesium is replaced with at least one element selected from the group consisting of titanium, beryllium, aluminum, manganese, zinc, chromium, iron, indium, cobalt, molybdenum, tin, lead, antimony, bismuth, copper, silver, palladium and platinum (see col. 41, claim 6). See also col. 12, ln 3-11. The thickness of the layer in which the transition metal is dispersed is preferably not less than 1 nm and not more than 30 nm (equivalent to 10-300 Angstroms) and more preferably, not less than 5 nm and not more than 10 nm (see col. 12, ln. 14-19).

Kawakami discloses the claimed hydrogen storage composite material, thus anticipates the claims.

Regarding the limitation on "said composite material capable of adsorbing at least 3 weight percent hydrogen and desorbing at least 1 weight percent hydrogen at 30°C", it is inherent that the disclosed powdery material would have the same capability since the material is the same as being claimed.

The claimed coating thickness is met by the teaching of the reference since it falls within the disclosed range (see above).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-11, 13-16, 23-26, 28-31, & 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US Pat. 6,040,087), as applied to claims 1-7, 12, 17-22, 27, & 32 above, and further in view of Sapru et al., "hereinafter Sapru", (US Pat. 6,103,024).

Kawakami discloses a powdery material as described above, except for the following differences.

Kawakami does not disclose the claimed Mg, Ni, manganese, and cobalt contents. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have predetermined the optimum amount for Mg and Ni in order to achieve an effective alloy in view of In re Boesch, because it involves only routine experimentation of one having the ordinary skill in the art to do so.

Also, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the manganese and cobalt at the amounts as suggested by Sapru to result in an effective alloy because it is known and taught by Sapru. Specifically, Sapru discloses a hydrogen storage alloy material containing Mg, Ni, Mo, and at least one additional element selected from the group consisting of Al, C, Ca, Ce, Co, Cr, Cu, Dy, Fe, La, Mn, Nd, Si, Ti, V, and Zr (see Sapru at col. 9- col. 10, claim 1), wherein the amount of the additional element is in the range of 1-15 atomic % (see Sapru at col. 10, claim 2). Note that the claimed manganese, cobalt, and the additional metal amounts fall within the claimed range.

***Claim Rejections - 35 USC § 102(b)/103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 34 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kawakami (US Pat. 6,040,087).

Kawakami discloses a powdery material as described above, except for the following difference.

Product-by-process limitations in the claim is noted. While the product of the reference is not made by the same process as being claimed, the product made is the same as claimed. It has been held that the patentability of the product and its method of production are separately determined. Thus, the process limitations in the claim have no bearing on the patentability of the claimed product. See *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); *In re Brown*, 173 USPQ 688, 688 (CCPA 1977); *In re Fessman*, 180 USPQ 324, 326 (CCPA 1977). See also *MPEP* 2113.

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***Citations***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 Form attached. All references are cited for related art.

***Conclusion***

8. Claims 1-34 are originally pending in the application. Claims 1-34 are rejected. No claims are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 8:45 AM - 5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn *CNN*  
May 06, 2005

*Cam Nguyen*  
CAM N. NGUYEN  
PRIMARY EXAMINER  
*AV-1754*